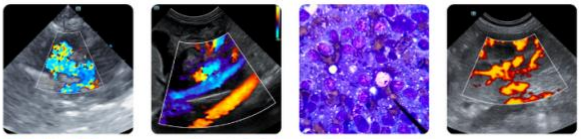



**PATIENT**

Toto Kim

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Neutered Male

**AGE**

12

**WEIGHT**

9.2

**INTERPRETED BY**

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

**IMAGING PERFORMED BY**

Dr. Sharkawy

**HOSPITAL NAME**

Union Vet Animal Hospital

**REFERRING VET**

Dr. Joseph

**INVOICE**

15523

**DATE**

04/27/26

## PRESENTING CLINICAL SIGNS

Right Head tilt AD- Aural bleeding , suspected ruptured tympanic membrane OS-dilated pupil OD-absence of Menace , Palpebral reflexes OU-Anisocoria Left nostril hemorrhage + suspected intra nasal mass Heart murmur grade 3/6 BW- Leukocytosis, Neutrophilia

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

| FELINE CARDIAC PARAMETERS | BODY WEIGHT | HR (BPM) | IVSd (cm) | LVIDd (cm) | LVWd (cm) | FS (%) | EF (%) |
|---|---|---|---|---|---|---|---|
| NORMAL PARAMETER | ------ | 150-240 | 0.3-0.6 | 1.0-2.1 | 0.25-0.6 | 35-67 | 80-100 |
| PATIENT | 9.2 | NM | 0.64 | 1.47 | 0.6 | 44 | 76 |
| **FELINE CARDIAC PARAMETERS** | **LA/AO** (M-mode) | **LA/AO HEART BASE** (Sisson) | **LAD** LA MAX 4 Chamber | | **LVOT VEL.** (m/s) | **RVOT VEL.** (m/s) | **IVRT** (m/) |
| NORMAL PARAMETER | <1.5 | 1.6 | 0.7-1.7 | | <1.6 | <1.3 | 40-60 |
| PATIENT | -- | 1.22 | 1.3 | | -- | 2.0 | NM |

Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

### *Cardiac Presentation*

The echocardiogram in this patient demonstrated normal **left atrial** size and structure with no evidence of "smoke" or thrombi. The cranial and caudal **mitral** valve leaflets appeared mildly thickened with some eccentric MR noted on Doppler. Definitive systolic anterior motion (SAM) of the mitral valve was not obvious yet not excluded. The **left ventricle** presented borderline to mild excessive free wall and septal thicknesses. Concurrent to mildly thickened remodeled papillary muscle. The **myocardium** presented with echogenic remodeling which may suggest some degree of concurrent fibrotic changes and myocardial remodeling. **Contractility** of the ventricular walls was considered excessive for this patient evidenced by the elevated fractional shortening measurement. The **left ventricular outflow** tract demonstrated turbulent laminar flow. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter. Mild increased measured RV outflow velocity. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The **mediastinum** was free of masses in the visible window.

## ULTRASONOGRAPHIC FINDINGS

- Borderline to mild thickened LV with myocardial remodeling, adequate LV systolic function.
- Normal LA.
- Normal RA/RV.

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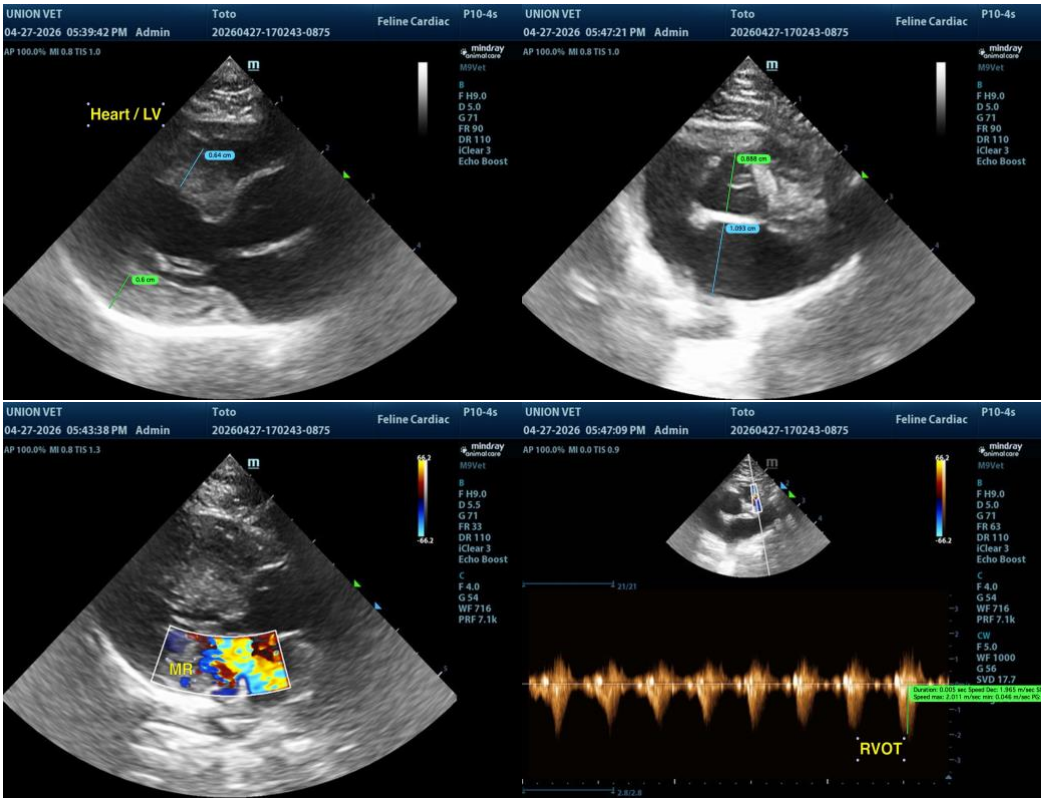
- Eccentric MR with mild increased measured RV outflow velocity.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

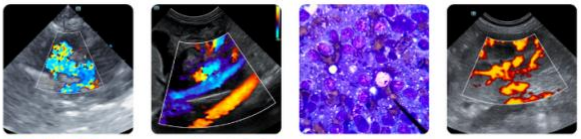
The echocardiogram is consistent with HCM or potential non-obvious HOCM phenotype. The cause of the murmur is likely secondary to associated mitral valve insufficiency with a contributing source of the murmur possibly dynamic right ventricle outflow tract obstruction, which is classified as a flow murmur.

The lack of cardiac chamber enlargement indicates the current and future risk of complication, i.e. congestive heart failure or thrombotic, event is low and not likely a contributing factor to the patient's clinical signs. No indication for cardiac medication at this stage. Assessment of systemic BP and T4 level to rule out complicating factors is indicated.

Given no current evidence of impending decompensation, judicious steroid use could be considered, although cardiac prognosis is highly variable and sonographic monitoring is indicated. Recheck echo is suggested in six months, sooner if clinically indicated. Cardiac anesthetic risk is considered mild. If required, the following protocol is suggested with judicious IV fluid used and close monitoring. Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.




**The information and recommendations provided are based on the images presented by the referring**





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**DATE**

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**veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**

info@SonoPath.com